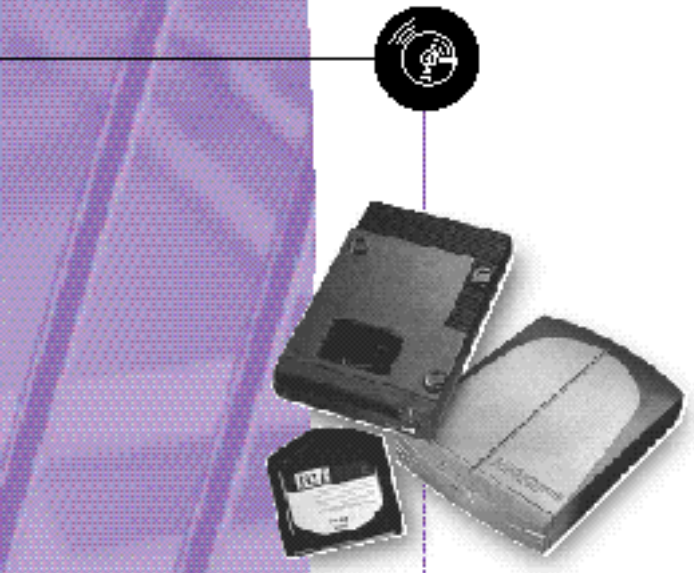
AXIS StorPoint™ HD

The Best Solution for Adding Removable Storage to Your Network



User's Manual

AXIS COMMUNICATIONS

Preface

Thank you for purchasing the AXIS StorPoint HD. This product is developed to make the storage and retrieval of information available to all users on Ethernet networks.

About This Manual

This manual applies to the standalone version AXIS StorPoint HD and the tower modules, AXIS StorPoint HD/T and AXIS StorPoint HD/4, with software release 1.10 and subsequent releases until otherwise notified. The manual is also available in electronic on-line format, together with more information at the Axis WWW Home Page (http://www.axis.com/).

This manual includes introductory information as well as detailed instructions on how to set up the StorPoint HD for your network environment. It also describes how to access and protect the Jaz drive data. The manual is mainly intended for Network Administrators or other personnel who install and configure the StorPoint HD. To use the manual effectively, you should be familiar with the network environment into which you are integrating the StorPoint HD.

Every care has been taken in the preparation of this manual; if you detect any inaccuracies or omissions, please inform us at the address found in "Appendix E - *How To Contact Axis*" . Axis Communications AB cannot be held responsible for any technical or typographical errors and reserves the right to make changes in this manual and to the product without prior notice.

About Axis

Axis Communications is dedicated to providing innovative solutions for the network connection of computer peripherals. Since the start in 1984, it has been one of the fastest growing companies in the market and is now a leader in its field. The headquarters are located in Lund, Sweden, with subsidiaries in Beijing, Boston, Hong Kong, Paris, London, München, Shanghai, Singapore, Seoul, Taipei and Tokyo.

Axis Communications has a distributor network operating in more than 60 countries world wide, marketing six product lines:

Network Scan Servers. Multiprotocol scan servers simplify distribution and archiving of paper-based information in workgroup and production scanning environments, by connecting scanners directly to the network for anyone to use.

Network Storage Servers. Multiprotocol storage servers provide a flexible and cost efficient solution for sharing removable storage over the network.

Network CD-ROM Servers. Multiprotocol CD-ROM servers provide a flexible and cost efficient solution for sharing CD-ROMs across the network.

Network Print Servers. High-performance multiprotocol printer servers allow users to share printers regardless of platform or network speed.

Network Camera Servers. These products provide a cost-effective solution for taking and broadcasting color pictures over the Internet and intranet networks. They connect directly to Ethernet networks and support TCP/IP and Internet-related protocols.

IBM Mainframe and S/3x – AS/400 Printer Interfaces. These products include a wide range of plug-in interfaces and standalone products.

Electromagnetic Compatibility (EMC) Notices

USA This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference. Shielded cables should be used with this unit to ensure compliance with the Class A limits.

CE

Europe This digital equipment fulfils the requirements for radiated emission according to limit B of EN55022/1994 and the requirements for immunity according to EN50082-1/1992 residential, commercial and light industry. (Compliance is not valid for unshielded network cables.)

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Section 1 Introduction

The AXIS StorPoint HD

The AXIS StorPoint HD connects Iomega Jaz drives to Ethernet networks. All users on the network can share the information and storage capabilities of any Iomega Jaz disk inserted into a connected drive. The AXIS StorPoint HD supports 1 Gbyte and 2 Gbyte Jaz drives.

Standalone Module

The standalone module, the AXIS StorPoint HD, connects up to 7 Iomega Jaz drives via its SCSI connector.

AXIS StorPoint HD

Tower Modules

The AXIS StorPoint HD/T has the same functionality as the standalone version, but the enclosure and connectors are designed to allow it to plug into an Iomega tower.

The AXIS StorPoint HD/4 and AXIS StorPoint HD/8 are self-contained tower systems consisting of one StorPoint HD module and four Iomega Jaz drives.

AXIS StorPoint HD/T

AXIS StorPoint HD/4 and HD/8

Features and Benefits

File server independence

The AXIS StorPoint HD is connected as a node in an Ethernet network. To the network the StorPoint HD acts as a file server. This means that it is independent of other file servers, i.e. the communication takes place directly between the network client and the StorPoint HD. This results in high performance and reliability.

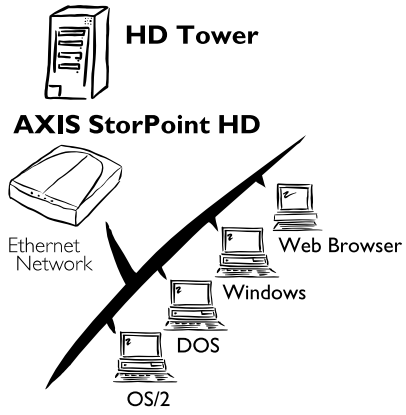
Plug and play

The file server independent approach makes installation quick and convenient. In most environments, the physical connection to the network is the only installation required prior to starting work with the StorPoint HD. No software needs to be installed on clients or file servers. Your computer will see the StorPoint HD as another network file server, and you access it using standard network operating system commands.

Environments

The AXIS StorPoint HD can be used simultaneously from Windows, OS/2, DOS, and Internet/intranet clients. It supports these basic messaging and network protocols:

- SMB over NetBIOS/NetBEUI
- SMB over NetBIOS/TCP/IP
- HTTP over TCP/IP



Internet/intranet Web server

The built-in Web server makes it possible to access data via any standard Web browser. The support includes configuration, management and Jaz disk access.

Speed By using the AXIS ETRAX chip, a 32 bit RISC processor specifically designed for LAN products, and an expandable cache memory, data throughput of up to 1050 kbytes/s is obtained.

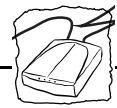
Security To restrict access to the Jaz disk data, you can set up passwords. Also, you can limit the number of simultaneous users in order to comply with license agreements.

Maintenance New software can easily be downloaded via the network to the StorPoint HD's Flash memory using FTP.

Year 2000 The StorPoint HD is year 2000 compliant.

Support At the Axis WWW Home Page, **http://www.axis.com/**, you can download more advanced technical information. You can also download on-line manuals and the latest versions of the software and software utilities. Alternatively, your Axis dealer will provide you with the assistance or information you require.

AXIS StorPoint HD is covered with a best-of-breed warranty and service program. If you take advantage of the Axis User Group free membership you can obtain a 5 year warranty, free software upgrades and support. In the USA and Canada there is also a 24 hour unit replacement service and a 90 days money back guarantee.



Section 2 Installing the StorPoint HD

This section includes step-by-step instructions for installing the StorPoint HD hardware. It also includes setup procedures for TCP/IP and the AXIS WinPoint software utility.

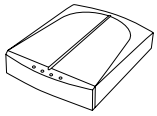
During the hardware installation, refer to these sections depending on which version of the StorPoint HD you are installing:

See section:	HD	HD/T	HD/4	HD/8
"*Checking and Identifying the Hardware*" on page 10	x	x	x	x
"*Installing the StorPoint HD/T in a Tower*" on page 12		x		
"*Connecting Jaz Drives to the StorPoint HD*" on page 14	x			
"*Connecting the StorPoint HD to the Network*" on page 16	x	x	x	x

Checking and Identifying the Hardware

Unpack and inspect all parts for damage. Contact your dealer if anything is missing. All packaging materials are recyclable.

The standard delivery includes the following:



❏ StorPoint HD:

Part no:	HD	HD/T	HD/4	HD/8
Ethernet	0077-1	0078-1	0078-2 (US) 0078-5 (Europe)	0078-8

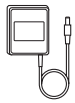
❏ AXIS StorPoint HD User's Manual (Part no: 15544)

❏ AXIS StorPoint HD Quick Installation Guide (Part no: 15542)

❏ AXIS Product Guide (Part no: 14412)

❏ AXIS User Group registration leaflet (Part no: 15119)

Included with the standalone version StorPoint HD only:



❏ Power supply (12V DC):

Part no:	PS-C
Europe	14235
UK	14236

Part no:	PS-C
US	14256
Japan	14257
Australia	14258

Included with the tower module StorPoint HD/T only:

❏ Network connection board and ribbon cable

❏ 4 screws for the server

❏ 2 screws and washers for the network connection board

Optional accessories:

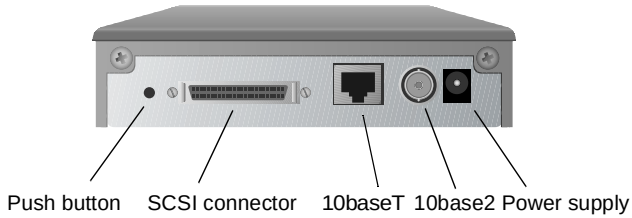
❏ SCSI-2 to 50 pin Centronics style cable (Part no: 14259)

❏ SCSI-2 to SCSI-2 cable (Part no: 14260)

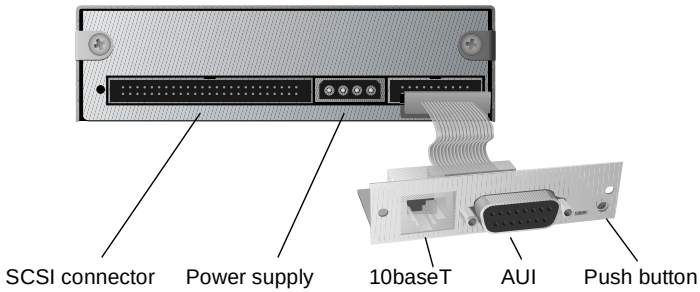
Physical Descriptions

Familiarize yourself with your version of the StorPoint HD. This information provides a useful reference during the installation.

AXIS StorPoint HD Ethernet



AXIS StorPoint HD/T Ethernet



The AUI connector allows you to connect a 10base2, 10base5 or fibre-optical cable using an appropriate external transceiver.

Indicators

The StorPoint HD front panel indicators show the status of the unit. The indicators have the following functions:

- Status - Flashes during startup. The light turns off when the StorPoint HD is ready for use.
- Disk - Turns on when the first Jaz disk is inserted and remains lit until the last disk is ejected.
- Network - Flashes to indicate the presence of network traffic.
- Power - Remains on to indicate that power is present in the unit.

Refer to "*Error Conditions*" on page 67 for a list of error conditions.

Push Button — Used for restoring the factory default settings. See "*Restoring Factory Default Settings*" on page 69.

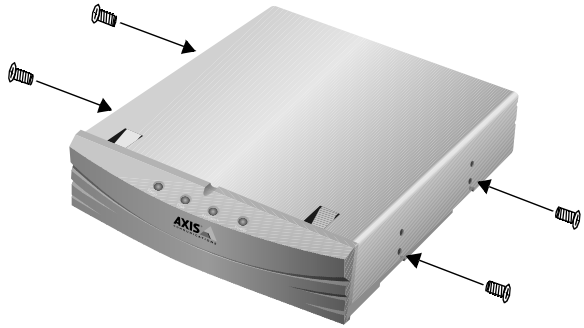
Installing the StorPoint HD/T in a Tower

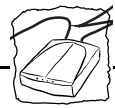
Note: ❑ If you are installing a standalone module StorPoint HD, skip this section and continue with "*Connecting Jaz Drives to the StorPoint HD*" on page 14.

The AXIS StorPoint HD/T is intended to be installed in standard tower systems. The dimensions of the StorPoint HD/T are the same as for standard drives, i.e. 5.25 inch half-height.

If not already installed when delivered, follow these steps:

1. Prepare the tower system for the installation, e.g. by removing the chassis.
2. Make a note of the serial number of the StorPoint HD/T. You will need this number during the network configuration described later. The number is found on the underside label of the server.
3. Slide the StorPoint HD/T into the tower.
4. Fix the StorPoint HD/T with the four screws supplied. Use the upper or lower holes depending on type of tower and mounting. See figure below.





Caution The length of the screws must **not** exceed 0.2 inch (5 mm). If they do, the internal components of the StorPoint HD/T may be damaged.

5. Attach power to the StorPoint HD/T. The power connector is a standard PC 4 pin power connector (12 and 5 V DC), as shown in the picture below. Hence, the power supply available in the tower system can also be used to supply the StorPoint HD/T.

6. Connect the external network connector board to the StorPoint HD/T using the ribbon cable. The external board includes both the network connectors and the Push button.Mount the board on the back of the tower system. The mounting plate on the board fits into the standard Centronics cut-out available on most towers.

Connecting Jaz Drives to the StorPoint HD

A single StorPoint HD can service up to 7 SCSI Jaz drives. The drives should be connected using the appropriate SCSI cable, which must be ordered separately.

Each unit on the SCSI bus must have a unique SCSI address. To work properly, the bus must be electrically terminated at both ends.

Before you begin

Standalone version only: Make sure that the power supply (PS-C, 12 V DC) included in the delivery is marked with the correct mains voltage.

Caution Always make sure the power is **not** connected to the StorPoint HD or any of the Jaz drives when making changes to the SCSI chain. The SCSI bus may be damaged if you connect or disconnect any units when the power is on.

Connecting the StorPoint HD

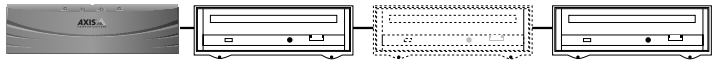
To connect the Jaz drives to the StorPoint HD, follow these steps:

1. Connect the SCSI cable to the SCSI connector on the StorPoint HD.
2. Connect the SCSI cable to the Jaz drive(s). The SCSI bus allows 7 Jaz drives to be connected to the StorPoint HD.
3. Set a unique SCSI address 0 through 6 for each of the Jaz drives. Refer to the Jaz drive documentation for instructions on how to set the SCSI address.

Note:

- ❑ The SCSI address of the StorPoint HD is 7 and cannot be changed.

4. Connect an external SCSI terminator to the last drive in the SCSI chain. The StorPoint has built-in SCSI termination which is always switched on. Therefore, the server must be physically located at one end of the chain.



Axis StorPoint HD server termination on. | Not terminated | Not terminated | Last drive terminated

Note: ❑ Do not terminate the Jaz drives placed between the StorPoint HD and the last drive.

5. Turn on power:
   Standalone version only: First connect power to all Jaz drives and switch them on. Then connect the external power supply to the StorPoint HD.
   Tower module only: Simply switch the power on to the whole of the StorPoint HD tower.

The StorPoint HD indicators will flash during power-on and self test. When the Status indicator stops flashing and remains off, the StorPoint HD is ready for use.

Connecting the StorPoint HD to the Network

Before you begin

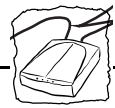
Always consult the Network Administrator before making changes to the network configuration.

Connecting to your Network

To connect the StorPoint HD to your network, follow these steps:

1. Turn off the power.
2. Connect the network cable to the appropriate connector.
3. Turn on power:
   Standalone version only: First connect power to all the Jaz drives and switch them on. Then connect the external power supply to the StorPoint HD.
   Tower modules only: Switch on the StorPoint HD tower.

The basic installation is now completed.



Setup for TCP/IP

To establish communication with the TCP/IP network, you must assign an appropriate Internet address to your StorPoint HD. For example, this is needed for access from a Web browser.

Before you begin

- You will need *administrator* privileges on the Windows NT server.
- Have the serial number found on the underside label of the StorPoint HD available.
- Make sure the StorPoint HD is powered up and attached to the network.
- Always consult the Network Administrator before making changes to the network configuration.

Assigning an Internet Address and a Host Name

Enter the Internet address and host name into your host table using the following instructions:

1. Acquire an available Internet address from your Network Administrator and make up a unique host name for your StorPoint HD. The host name you choose will be used when mounting the StorPoint for HTTP use.
2. The host tables are normally located in the following directories:
   - Windows 95 - c:\windows\hosts
   - Windows NT - c:\winnt\system32\drivers\etc\hosts
   - OS/2 - c:\etc\hosts
3. Add the Internet address and host name to your system host table by appending the following line:

```
<Internet address>                    <host name>
```

Example:

```
192.36.253.80                         hdserv
```

Caution Do not use the default or the above Internet address when installing your AXIS StorPoint HD. Always consult your Network Administrator before assigning an Internet address.

Note:

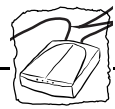
- ❑ If the host name has not been included in the system host table as described above, you can still perform the following instructions on how to download the Internet address. In this case, simply replace the host name entry with the Internet address.

Downloading the Internet Address

You can send the Internet address to the StorPoint HD using the ARP, RARP, BOOTP or DHCP method. The main characteristics for each method are:

- ARP – Requires that the Internet address is downloaded to each new device individually. The protocol is not routable, i.e. the workstation from which configuration is made has to be located on the same network segment as the StorPoint HD.
- RARP- Downloads the Internet address to each device automatically. Requires a RARP daemon on your system and operates within a single network segment only.
- BOOTP- Similar to RARP, but operates on the entire network. Requires a BOOTP daemon on your system.
- DHCP - Allows for the automatic but temporary assignment of Internet addresses from a central pool. DHCP will, when enabled, cause the selected host to automatically allocate and download a free Internet address, Default Router address and Net Mask to the requesting StorPoint HD. It also provides validation data that defines how long the Internet addresses will remain valid.

Choose the method best suited to your needs. Procedures for using each of the methods are outlined below.



Caution All the methods are enabled by default. You can disable the RARP, the BOOTP and the DHCP methods by setting the `RARPEnable`, `BOOTPEnable` and `DHCPEnable` parameters in the `config.ini` file. To avoid unexpected results, only one method should be enabled at the same time:

- If both a BOOTP and a DHCP server provides an Internet address, the BOOTP address will be used.
- If both a RARP and a BOOTP or DHCP server provides an Internet address, the results will be undefined.
- If you set the Internet address using ARP but also have a DHCP server running on your network, the DHCP server will, if enabled, automatically provide another Internet address for your StorPoint HD.

Using ARP in Windows 95 and Windows NT

Perform the following commands from the DOS prompt to download the Internet address and verify the communication:

```
arp -s <Internet address> <Ethernet or node
address>
ping <Internet address>
```

The `Ethernet address` or `node address` equals the serial number found on the underside label of the StorPoint HD with each pair of digits separated by a hyphen.

The host will return '`Reply from 192.36.253.80...`' or similar indicating that the address has been set and that communication is established.

Example:

```
arp -s 192.36.253.80 00-40-8c-11-00-86
ping 192.36.253.80
```

Notes:

- ❑ Once the StorPoint HD has established communications using an appropriate Internet address the `arp/ping` commands cannot be used to change the address. The reason is to avoid accidental or unauthorized change of the Internet address. You have to restart the StorPoint HD to make it accept the setting.
- ❑ In Windows 95, the `arp` command cannot be used if you have an empty ARP table. Type `arp -a` to view the ARP table. If this is empty you must ping an existing unit on your network before you can set the Internet address of your StorPoint HD.
- ❑ When you execute the `ping` command for the first time you should expect a response time significantly longer than usual.

Using ARP in OS/2 and UNIX

Type the following commands to download the Internet address and verify the communication:

```
arp -s <host name> <Ethernet or node address> temp
ping <host name>
```

The `Ethernet address` or `node address` equals the serial number found on the underside label of the StorPoint HD with each pair of digits separated by a colon.

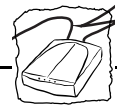
The host will return '`hdserv is alive`' or similar message. This indicates that the address has been set and that communication is established.

Example:

```
arp -s hdserv 00:40:8c:11:00:86 temp
ping hdserv
```

Notes:

- ❑ The `arp -s` command may vary between different systems. Some BSD-type systems expect the host name and Ethernet address in reverse order. IBM AIX systems require the additional argument `ether` for Ethernet networks (e.g. `arp -s ether salesdept 00:40:8c:11:00:86 temp`).



- Once the StorPoint HD has established communications using an appropriate Internet address, the `arp/ping` commands cannot be used to change the address. The reason is to avoid accidental or unauthorized change of the Internet address. You have to restart the StorPoint HD to make it accept the setting.
- When you execute the `ping` command for the first time, the response time may be significantly longer than usual.

Using RARP

Follow these steps to use the RARP method:

1. Append the following line to your Ethernet address or Node address table (typically `/etc/ethers`):

```
<Ethernet or node address>          <host name>
```

Example:

```
00:40:8c:11:00:86                   hdserv
```

The `Ethernet address` or `node address` equals the serial number found on the underside label of the StorPoint HD with each pair of digits separated by a colon.

2. Make sure the host table and alias name databases are updated as described on page 17.
3. Start the RARP daemon (if not already running), typically by the command: `rarpd -a`
4. Restart the StorPoint HD to download the Internet address.

Using BOOTP

Follow these steps to use the BOOTP method:

1. Append the following entry to your boot table (typically `/etc/bootptab`):

```
<host name>:ht=<hardware type>:vm=<vendor magic>:\
:ha=<hardware address>:ip=<Internet address>:\
:sm=<subnet mask>:gw=<gateway field>
```

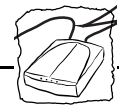
where:

ht =	ether for Ethernet
vm =	rfc1048
ha =	The Ethernet or node address, i.e. the StorPoint HD serial number
ip =	The Internet address of the StorPoint HD
sm =	The subnet mask
gw =	The default router address

Example

```
hdserv:ht=ether:vm=rfc1048:\
:ha=00408c110086:ip=192.36.253.80:\
:sm=255.255.255.0:gw=192.36.253.254
```

2. Make sure the host table and alias name databases are updated as described on page 17.
3. Start the BOOTP daemon (if not already running), typically by the command: `bootpd -a`
4. Restart the StorPoint HD to download the Internet address, default router address and net mask.



Using DHCP

Follow these steps to use the DHCP method:

1. Edit or create a scope in the DHCP manager of the DHCP daemon. The entries made in this scope should include the following information:
   - Range of Internet addresses
   - Subnet mask
   - Default router Internet address
   - NetBIOS over TCP/IP name server Internet address(es)
   - NetBIOS over TCP/IP *node type*
   - NetBIOS over TCP/IP scope ID
   - Lease duration
2. Activate the scope.
3. If DHCP has been disabled, you must set the `DHCPEnable` parameter to `yes` in the `config.ini` file of the StorPoint HD.

Node Type The StorPoint HD can act either as a B Node (WINS disabled), or as a H Node (WINS enabled)

Setting Up - the AXIS WinPoint Utility

In the Windows 95 and Windows NT 4.x environments, you can optionally install the **AXIS WinPoint** utility that makes configuration, management and access to your StorPoint HDs simple and convenient. It is intended for the Network Administrator.

The installation and setup procedures are detailed below.

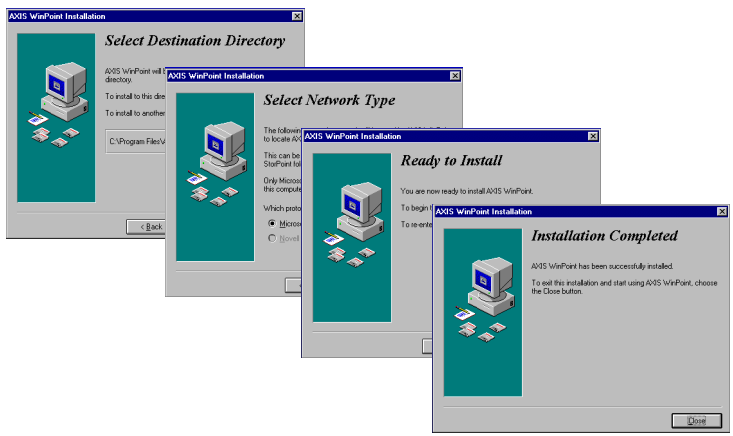
Installing the AXIS WinPoint Utility

You can download the required software from the Axis Web site, see "Appendix E - *How To Contact Axis*".

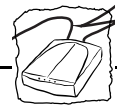
Note: ❑ Before installing the AXIS WinPoint utilities, it is recommended that you close all Explorer windows and other applications.

Follow these steps:

1. Locate the setup file, `Setup.exe`, and choose the **Run** option from the Windows Start Menu.
2. Click **OK**. The AXIS WinPoint **Welcome** screen is displayed.
3. Click **Next** to proceed with the installation or **Cancel** to quit the installation. The **Select Destination Directory** screen is displayed.



AXIS WinPoint installation wizard screens



4. After working through the wizard screens, you can begin the installation or step back through the process to re-enter installation information.

When finished, the **Installation Completed** screen is displayed. The AXIS WinPoint utility is now available from a shortcut on your Windows Desktop, or through the folder that has been installed under the My Computer folder.

Uninstalling

You can uninstall the AXIS WinPoint software by using the Add/Remove Programs utility in the Windows Control Panel.

Note:

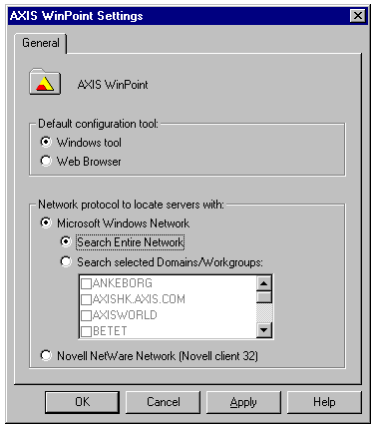
- ❑ Before uninstalling AXIS WinPoint, you are recommended to close all Explorer windows.

Setup - the AXIS WinPoint Utility

The AXIS WinPoint utility locates StorPoint servers on the network. It allows you to manage them with WinPoint's Windows configuration tool or with a Web browser.

To change the general WinPoint settings, follow these steps:

1. In Windows Explorer, right click the AXIS WinPoint icon and choose WinPoint Settings from the pop-up menu. This dialog box is displayed:



2. Select the default tool for configuring the StorPoint HDs on the network:

   - AXIS WinPoint's Windows configuration tool or
   - Web browser.

   The selected tool will be launched automatically when you double click a StorPoint HD icon.
3. Select the network protocol to be used when locating StorPoint HDs:

   - Microsoft Windows Network or
   - Novell NetWare Network (Novell client 32).

   For the Microsoft Windows Network protocol, you must also specify whether you want WinPoint to search the entire network or selected domains/workgroups only.
4. Click OK.

AXIS WinPoint's Configuration Tool

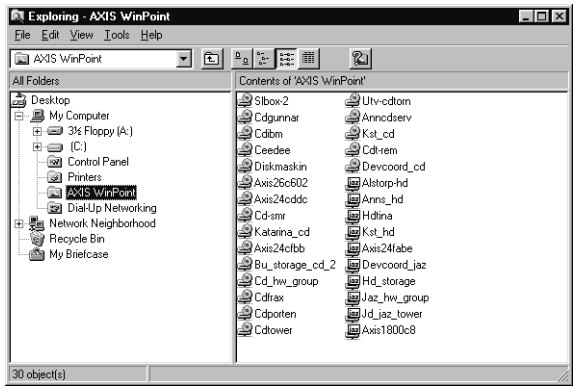
The AXIS WinPoint's configuration tool allows you to:

- Access Jaz disks
- Manage access rights
- Restart the StorPoint HD
- Restore the factory default settings
- Update the configuration parameters

Note: ❑ The same services are available from the StorPoint HD's Web interface.

To launch the WinPoint's configuration tool, follow these steps:

1. Open the AXIS WinPoint folder in your Windows Explorer under My Computer. WinPoint lists all StorPoint servers found on the network:



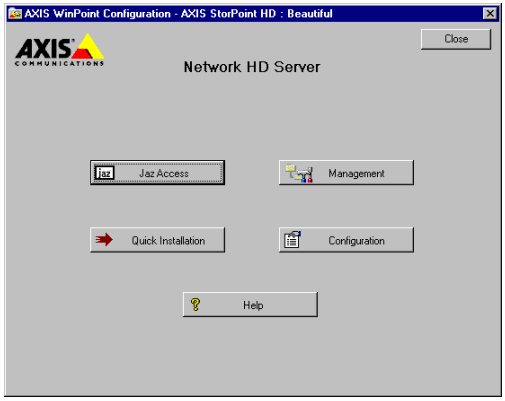
On your first request after startup, WinPoint will search the entire network for available StorPoint servers. On following requests, WinPoint will retrieve and display the previous search result. If you need an updated search, choose Refresh from the View menu.

2. For each StorPoint HD, you can:

   - Start a configuration tool
   - Set the Internet address
   - Access Jaz disks
   - Display general information about the server

   To choose any of these actions, you can right click the StorPoint HD and select the appropriate option from the pop-up menu.

3. To start the AXIS WinPoint's configuration tool, right click the StorPoint HD and select Configuration-Windows. This window will appear:



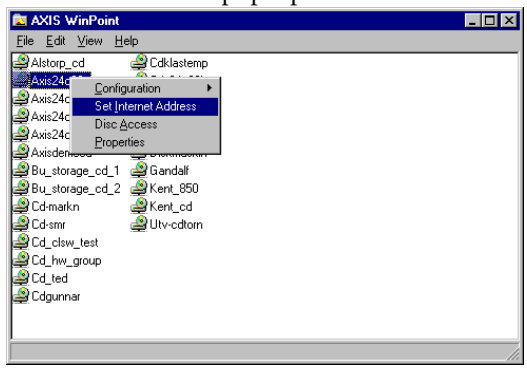
The AXIS WinPoint's Windows configuration tool

From this screen you have access to all the StorPoint HD services.

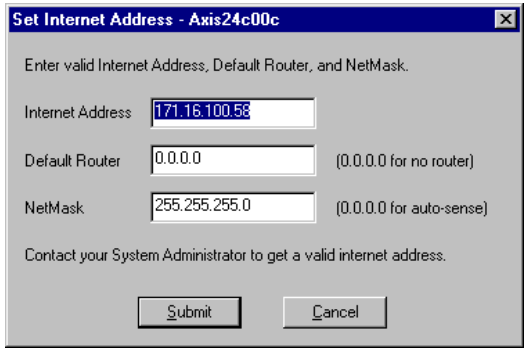
Setting the Internet Address

To set the Internet address from AXIS WinPoint, follow these steps:

1. Find a valid Internet address for the StorPoint HD.
2. In Windows Explorer, right click the StorPoint HD and select Set Internet Address from the pop-up menu.



3. Enter a valid Internet address, and click Submit.



Caution Always consult your Network Administrator before assigning an Internet address.

Section 3 Setting Up - Web Browser (HTTP)

This section describes how to use the StorPoint HD from a Web browser. It also includes information on how to setup access restrictions in the HTTP environment.

The AXIS StorPoint HD supports HTTP over TCP/IP. This means that the StorPoint HD works as a web server, available on the Internet and intranets.

Accessing the Web Pages

To access the StorPoint HD Home Page, you must set the Internet address as described in "*Setup for TCP/IP*" on page 17.

You can access the Jaz disks from any standard Web browser, such as Netscape Navigator or Microsoft Internet Explorer. The example below uses Netscape Navigator.

1. Start the Web browser, e.g. Netscape Navigator.
2. In the Location field, enter the URL of the server, i.e. `http://<Internet address>`. Alternatively, use the host name assigned to the StorPoint HD.

3. Click Open. This brings you to the Home Page of your AXIS StorPoint HD:

HTTP Management Services

From the StorPoint HD Home Page, links to the following services are available:

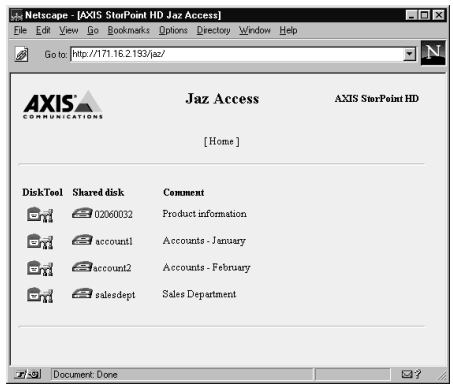
- Jaz Access
- Management
- Quick Installation
- Configuration
- Help

You can also visit Axis on the net, take a company tour and access any of the Axis Network Jaz disk Server on-line services; manuals, software updates, and technical support. You may also join the Axis User Group for extended warranty and other valuable benefits.

Note: ❑ If required, you can switch the HTTP support on or off by setting the `HTTPEnable` parameter in the StorPoint HD configuration file. The default setting is `on`.

The Jaz Access page lists all the inserted Jaz disks. You access the Jaz disk data as from any other file manager.

From this page, you can also access the Disk tools by clicking on the Disk tools icon next to each disk in the list.



Disk Tools

The Disk tools allow you to:

- Display general information about a Jaz disk
- Format a Jaz disk
- Specify a volume label
- Change protection mode for a Jaz disk
- Make a Jaz disk removable or nonremovable from the drive

Protection Modes

These Jaz disk protection modes are available:

- Unprotect - Read/write allowed
- Write - Read allowed, write not allowed
- Read_Write - Read/write not allowed
- UnprotectUntilEject - Read/write allowed until ejected, then not allowed

When changing the protection mode, you can also specify a disk password to restrict user access. For Write, a password is optional. For Read_Write, a password is required.

Note:

- Note that the Disk tools operate directly on the inserted Jaz disks. Thus, the specified protection data will be stored on the individual disks. This is opposed to the StorPoint HD access control files in the Volumes folder, which hold information on the access rights to the StorPoint HD resources via different network protocols.

The Management page presents general information about the StorPoint HD. From this page you can access the SCSI and Volume Rights pages. The SCSI page presents information about the SCSI drives. On the Volume rights pages, you can setup access restrictions for the various StorPoint HD volumes for each network environment.

On the Quick Installation page, you can set a few basic parameters in the StorPoint HD. These are the parameters needed to get access rights, password handling and user authentication working properly.

On the Configuration pages, you can set all parameters on the StorPoint HD.

You can access on-line help from any of the StorPoint HD web pages. From the StorPoint HD Home Page, you can access the general help page that describes the available services. Each Management and Configuration page has a link to a detailed help page.

Accessing Jaz disks from a Web Browser

You access the Jaz disks by clicking on the Jaz Access icon on the StorPoint HD Home Page. All the inserted Jaz disks are listed with the volume names or, if set, the alias name of the Jaz disks or Jaz disk drives. Click on a Jaz disk to view its contents in the form of a list. You can use the Web browser as any other file manager utility.

Some Jaz disks contain an `index.htm` or `index.html` file that allows you to access the contents of the disc from a browser page. If you click on such a disk, this page will appear instead of a simple list. However, you can replace the index page with a simple listing, by adding `/.` after the location address and pressing the Return key.

Adding Bookmarks

For easy access to your StorPoint HD resources, you can add bookmarks in your Web browser. In Netscape Navigator, you simply select Add Bookmark from the Bookmarks menu on pages you want to return to later.

Note:

- Web browsers usually save the pages you view, so that you can return to them very quickly by retrieving them from local cache memory. This may cause a problem if Jaz disks have been changed, because when you return to the Jaz Access page, you will not see the changes. To display the changes, simply reload the page by selecting Reload from the View menu or click the Reload.

Managing Security in HTTP

All users will always have access to the StorPoint HD Home Page. However, you can restrict access to the Jaz disks and to the StorPoint HD configuration and security files.

Jaz disks

To restrict user access to the drives and inserted Jaz disks from a Web browser, you specify the `SMBPassword` parameter in the appropriate access files in the Jazdisk and Scsi folders on the Management - Volume Rights page. See parameter description on page 50. The `SMBPassword` parameter is also used for access control in Windows (SMB).

Users will be prompted for user name and password when trying to access the Jaz disks. Any user name will be accepted.

Note:

- If you have specified a SCSI alias name for a Jaz drive, the drive settings will override the disk settings. Therefore, if a SCSI alias has been set the only way to protect the inserted disk is to set an `SMBPassword` for the Jaz disk drive. For example, this can be useful if you want to restrict access to a series of Jaz disks, e.g. a monthly issue.

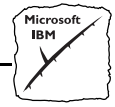
See also "*Disk Tools*" on page 33 on how to set the protection mode on the individual Jaz disks.

Configuration and Security Files

To protect the StorPoint HD configuration and security files, you specify an Administrator password in the `ServerPassword` parameter on the Configuration - Server page.

Users will be prompted for user name and password when entering the Configuration, Quick Installation and Management pages for the first time during a session. Note that any user name will be accepted.

For more information on access rights for the StorPoint HD, refer to "Section 6 - *StorPoint HD Security System*".



Section 4 Setting Up - Microsoft and IBM Networks (SMB)

This section includes information for configuring the StorPoint HD in the Microsoft and IBM environments. It also explains how to access Jaz disks using SMB clients, and how to set up access restrictions.

Configuration in SMB

In Microsoft and IBM network operating systems as Windows 95, Windows NT, Windows for Workgroups or OS/2, the StorPoint HD does not need any specific configuration to be operational. However, you can change the default settings in the configuration file to better suit your needs.

Network Protocols

SMB (Server Message Block) is a protocol that makes use of NetBIOS. NetBIOS can be transported over several different network protocols. The StorPoint HD supports the following transport methods:

- SMB over NetBIOS/NetBEUI
- SMB over NetBIOS/TCP/IP (also designated NBT)

Both protocols are enabled by default. You disable these protocols by editing the `EnableNetBEUI` and `EnableNBT` parameters, respectively. Disabling a protocol increases the performance of other protocols used and reduces network traffic.

SMB Server Name

The default SMB server name is `AXIS<nnnnnn>`, where <nnnnnn> are the six last digits of the StorPoint HD serial number. You can change that name by editing the SMB `ServerName` parameter.

Windows Internet Name Service (WINS)

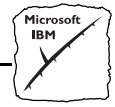
Windows Internet Name Service (WINS) allows Windows-based clients to locate NetBIOS resources on TCP/IP networks. If you intend to use WINS with the StorPoint HD, you must set these parameters:

Parameter name [SMB]	**Value**	**Description**
EnableWins	= yes	Enables WINS over NetBIOS/TCP/IP.
PrimaryWINSServer		The Internet address of the primary WINS server.
SecondaryWINSServer		The Internet address of the secondary WINS server.
NBTscopeID		Defines the NetBIOS scope to which the StorPoint HD belongs.

Time Synchronization

You can set the time of the StorPoint HD manually by specifying the `Date` and `Time` parameters:

Parameter name [Server]	**Value**	**Description**
Date	= *yy-mm-dd*	Enter the date, followed by ! to set manually. E.g. *98-03-01 !*
Time	= *hh:mm:ss*	Enter the time in 24 hour format, followed by ! to set manually. E.g. *18:00:00 !*



Accessing Networked Jaz Drives (SMB)

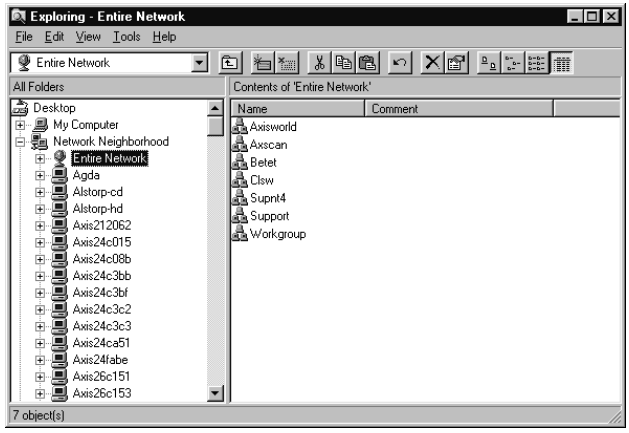
In the Microsoft and IBM network environments, you access the AXIS StorPoint HD just like any other workstation or file server. This section describes how to access the StorPoint HD using clients for Windows 95, Windows for Workgroups, Windows NT, OS/2 and DOS.

Notes:

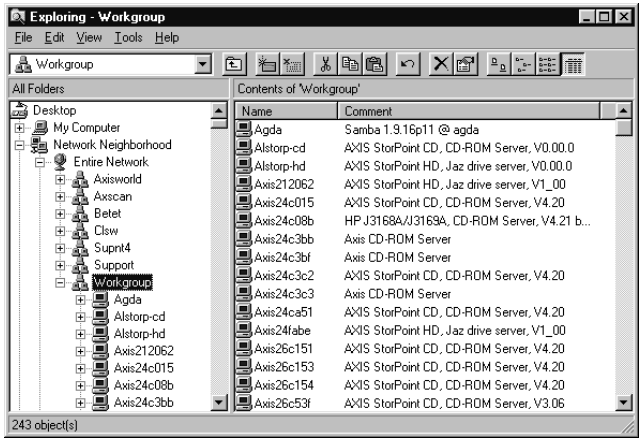
- The examples below assume that you have not changed the SMB server name. The default server name in the SMB environment is `AXIS<nnnnnn>`, where `<nnnnnn>` are the six last digits of the StorPoint HD serial number. If you have changed the server name, use the new name where the examples refer to the default name.
- The Network Administrator can set the configuration parameter `ShowAllShares` so that the only files shown are the Jaz disks. If this is the case, the `root` folder will not be shown when accessing the StorPoint HD. However, it can still be accessed by manually inserting the path when mapping the drive.
- In the Microsoft Network environment network resources are accessed by specifying a server and a resource on that server using the `\\server\resource` syntax (UNC - Universal Name Convention). The resource is **not** a file path and it is therefore not possible to replace the resource name with the path to a file or folder on your Jaz disk. Thus, according to the StorPoint HD file system as described in "*Directory Structure*" on page 51, mapping would only be only be possible at Jaz folder level. However, the StorPoint HD also allows you to map these resources on SMB clients:
  - `root` - which includes the complete file system of the StorPoint HD
  - `nnnnnnnn` - a folder for each Jaz disk (or Jaz drive if an alias name for the SCSI ID has been set)

Windows 95 and Windows NT 4.x

1. Start the Windows Explorer from the Start/Programs Menu.
2. Expand the Network Neighborhood icon.

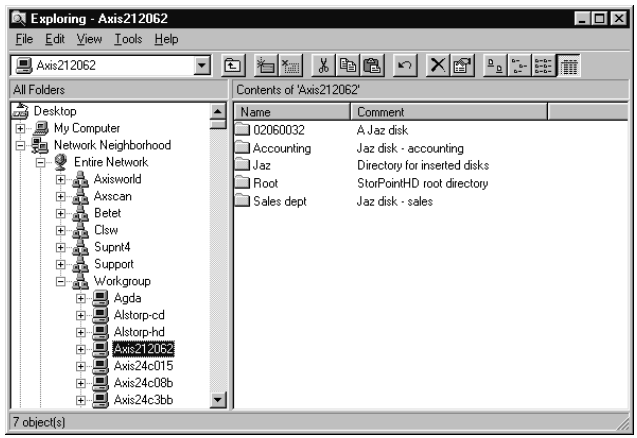


3. Expand the Entire Network icon and open the Workgroup folder.



Note: ❑ If the Workgroup folder is not visible, refer to "*Alternative Method of Connection*" on page 42.

4. Double click the entry for your new StorPoint HD. The default name is `Axis<nnnnnn>`, where `<nnnnnn>` are the six last digits of the StorPoint HD serial number.



Note: ❑ If the configuration parameter `ShowAllShares` has been set to `no`, the only files you will see are the Jaz disks. The individual Jaz disks are shown as well as the jaz folder that contains them. This is not the normal hierarchical appearance, but it is done this way to give you the choice of either mounting individual Jaz disks, or all of them together.

5. To map one of the StorPoint HD resources, select:
   - `root` for access to all folders and files
   - `jaz` for access to all of the Jaz disks
   - the Jaz disk for access to an individual Jaz disk
6. From the Tools menu, select Map Network Drive...
7. Select a drive letter for your StorPoint HD.
8. Check Reconnect at logon if you wish to use the StorPoint HD under the same drive letter the next time you start your computer.
9. Click OK. The StorPoint HD is ready for use.

Alternative Method of Connection

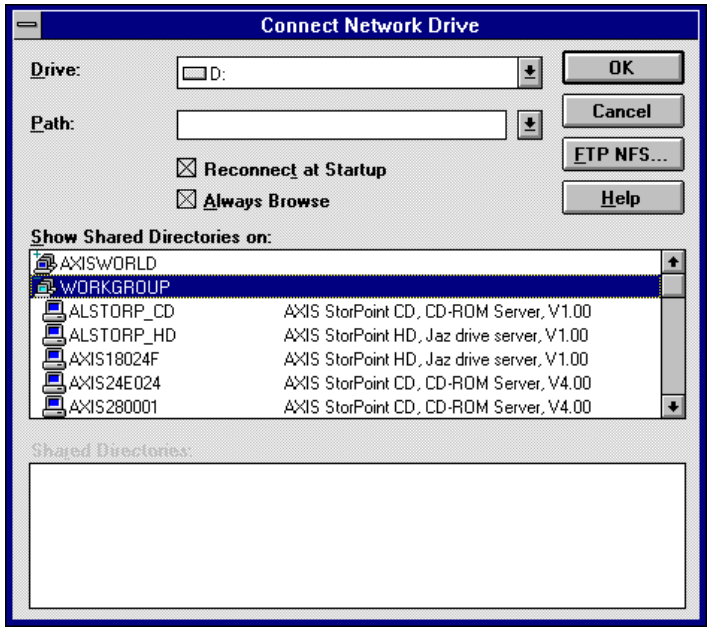
If you have removed the default workgroup named 'Workgroup', the StorPoint HD will not be visible in the browser until you have specified an existing workgroup in the `Domain/GroupName` parameter. To map the StorPoint HD, follow these steps:

1. Start the Windows Explorer from the Start menu.
2. Select Map Network Drive... from the Tools menu.
3. Select a drive letter.
4. In the path box, type `\\AXIS<nnnnnn>\root`, where `<nnnnnn>` are the six last digits of your StorPoint HD serial number.
5. Check Reconnect at logon if you wish to use the StorPoint HD under the same drive letter the next time you start your computer.
6. Click OK. The StorPoint HD is ready for use.

You can edit the configuration file to make your StorPoint HD appear in any existing workgroup.

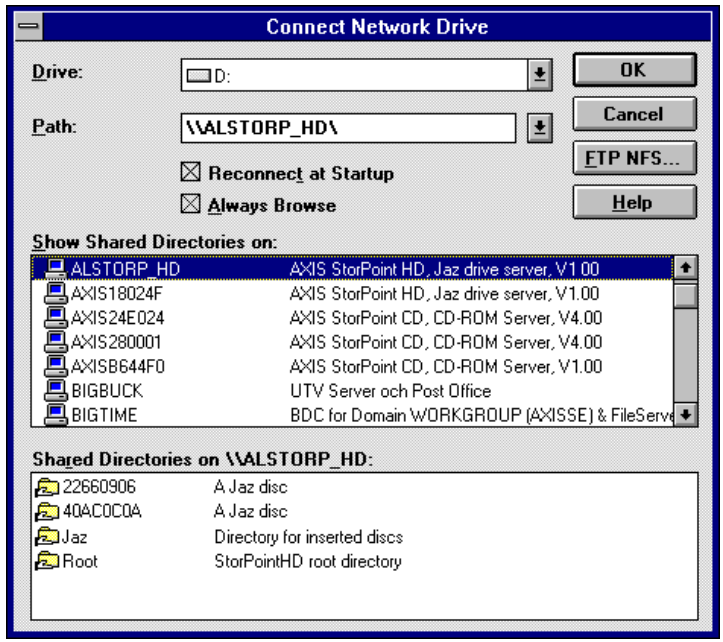
Windows for Workgroups

1. Start the File Manager.
2. From the Disk menu, select Connect Network Drive… Double click Workgroup. The following dialog is displayed. You may have to click Browse>> to see the complete dialog.



Note: ❑ If you have removed the default workgroup named 'Workgroup', the StorPoint HD will not be visible in the browser until an existing workgroup has been specified in the StorPoint HD configuration file. To connect to the Jaz disk, you can enter `\\AXIS<nnnnnn>\root`, where `<nnnnnn>` are the six last digits of the StorPoint HD serial number, in the 'Path' box and click OK.

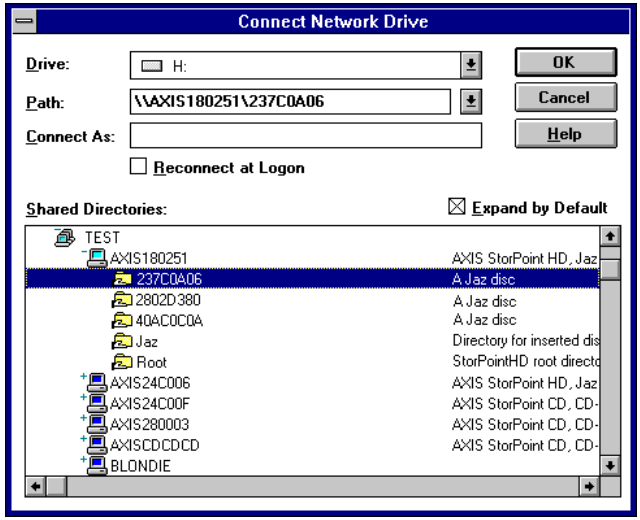
3. In the top listing, double click the entry for your new StorPoint HD. The default name is `AXIS<nnnnnn>`, where <nnnnnn> are the six last digits of the StorPoint HD serial number.



4. From the bottom listing, select one of the StorPoint HD resources:
   - `Root` for root level access
   - `Jaz` for Jaz folder access
   - the Jaz disk for access to an individual Jaz disk
5. Select a drive letter.
6. Check Reconnect at Startup if you wish to use the StorPoint HD under the same drive letter the next time you start your computer.
7. Click OK. The StorPoint HD is ready for use.

Windows NT 3.x

1. Start the File Manager.
2. From the Disk menu, select Connect Network Drive…
3. In the listing, double click the entry for your new StorPoint HD. The default name is `AXIS<nnnnnn>`, where <nnnnnn> are the six last digits of the StorPoint HD serial number.

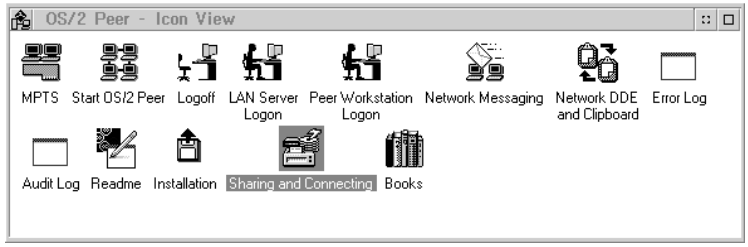


4. To connect a StorPoint HD resource, select:
   - `Root` for root level access
   - `Jaz` for jaz folder access
   - the Jaz disk for access to an individual Jaz disk
5. Select a drive letter for your StorPoint HD.
6. Select Reconnect at Logon if you wish to use the StorPoint HD under the same drive letter the next time you start your computer.
7. If you wish to connect using a different user name, enter the name in the Connect As box. Otherwise, leave the Connect As box empty.
8. Click OK. The StorPoint HD is now ready for use.

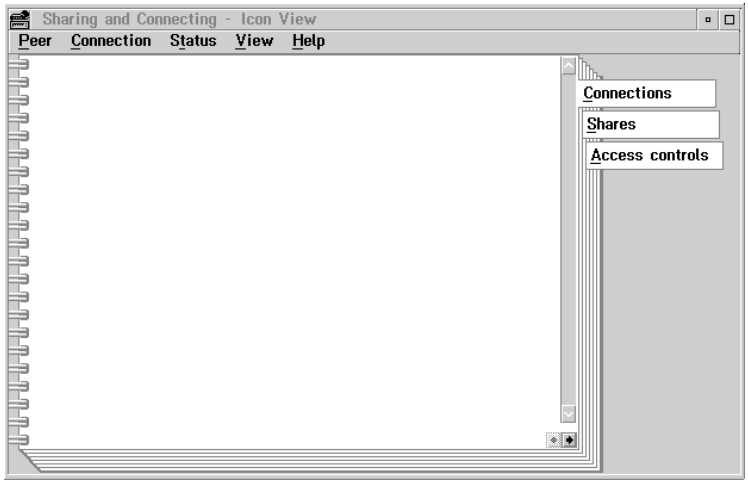
IBM Peer for OS/2

Make sure you have IBM Peer for OS/2 installed. If not, see the instructions in "*OS/2*" on page 48.

1. Double click the OS/2 Peer icon. The Peer window is displayed:

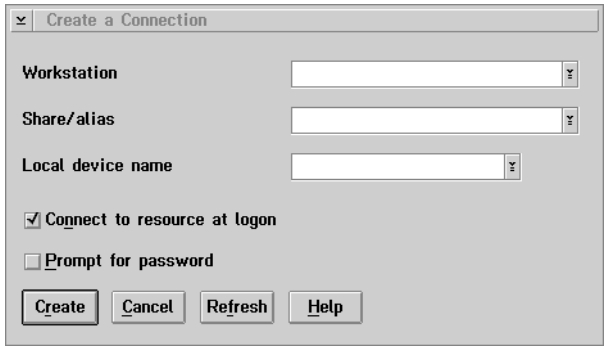


2. Double click the Sharing and Connecting icon to open this window:



Any active connections you have will be listed in the window.

3. From the Connection menu, select Create. This dialog is displayed:



4. In the Workstation field, enter `AXIS<nnnnnn>`, where `<nnnnnn>` are the last six digits of your AXIS StorPoint HD serial number.
5. In the Share/alias field enter the name of any StorPoint HD folder or inserted Jaz disk.
   - For root level access, type `root`
   - For Jaz folder access, type `jaz`
   - For Jaz disk access, type the volume name of the Jaz disk (for example `hd_18881`)
6. In the Local device name field, select a drive letter for your StorPoint HD.
7. Click Create. The StorPoint HD is ready for use.

Note: ❑ The StorPoint HD folders will not be visible on the Desktop in OS/2 versions prior to OS/2 WARP Connect. If you wish to use an earlier version of OS/2, we recommend using third party NFS software to connect to the StorPoint HD.

OS/2

If you do not have Peer for OS/2, you can map the StorPoint HD to a drive letter using the `net use` command. Follow these steps:

1. Open an OS/2 window.
2. Use the `net use` command to mount the StorPoint HD.
   At the OS/2 prompt, type:
   `net use <drive letter>: \\AXIS<nnnnnn>\<folder>`
   where <nnnnnn> are the six last digits of your StorPoint HD serial number and `<folder>` is any StorPoint HD folder.
3. To make the connections permanent, create or edit your `startup.cmd` file to include your `net use` commands.

DOS

In DOS, you mount the StorPoint HD using the `net use` command, provided that the appropriate network support is installed.

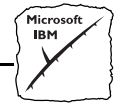
1. At the DOS prompt, type:
   `net use <drive letter>: \\AXIS<nnnnnn>\<folder>`
   where <nnnnnn> are the six last digits of your StorPoint HD serial number and `<folder>` is the StorPoint HD folder you want to map.
2. To make the connections permanent, edit your `autoexec.bat` file to include your `net use` commands.

   Example (Root level access):
   To access the root level of your StorPoint HD with serial number 00408C18025C under the drive letter E, type:

   ```
   net use E: \\AXIS18025C\root
   ```

   Example (Jaz folder access):
   If your StorPoint HD serial number is 00408C18025C, and you want to be able to access all the Jaz disks under the drive letter F, type:

   ```
   net use F: \\AXIS18025C\jaz
   ```



Example (Jaz disk access):
If your StorPoint HD serial number is 00408C18025C, and you want to map a Jaz disk named hd_18881 to drive G, type:

```
net use G: \\AXIS18025C\hd_18881
```

Notes:

- If you are using DOS within Windows 95 or Windows NT 4.x, and you wish to access files or directory names longer than 8 characters, you will need to precede these long names with a quote mark (“). For example, to change to the directory called Product Information:

```
G:\AXIS18025C\JAZ\>CD “PRODUCT INFORMATION
```

- Windows NT gives the additional facility of using the * wildcard. For example, a quick way of changing to the Product Information directory would be:

```
G:\AXIS18025C\JAZ\>CD “PRODUCT*
```

Managing Security in SMB

The StorPoint HD implements share level access control only, i.e. user level access is not yet supported. This means that you can assign a password to the StorPoint HD folders and inserted Jaz disks. The user will automatically be prompted for the password when trying to access the shared folder. Access will then be granted to that folder and all its subfolders.

You set the password by specifying the `SMBPassword` parameter in the access control files in the Volumes folder. These values are valid:

`SMBPassword`	Description
<password>	Any valid password (Max. 13 characters).
*	No password required to access the folder.
<entry not present>	No password required to access the folder.

Example 1:
Restrict access by prompting the user to enter a password, e.g. 'pass':

```
SMBPassword = PASS
```

Example 2:
Grant all users access:

```
SMBPassword = *
```

Note:

- The `SMBPassword` parameter also controls Web browser access to the Jaz disks. However, the setting in the `root.txt` file is ignored when accessing the configuration and security files through a Web browser.

See "*Disk Tools*" on page 33 on how to set the protection mode on the individual Jaz disks.

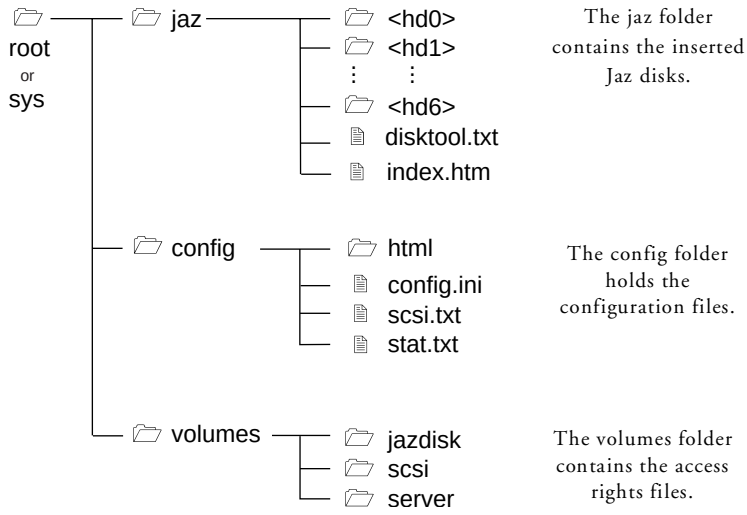
For more information on access rights for the StorPoint HD, refer to "Section 6 - *StorPoint HD Security System*".

Section 5 The StorPoint HD File System

This section introduces the StorPoint HD file system and explains how to choose access points when mapping Jaz disks. To access networked data from your applications, you need to make the disks available to your system by defining access points on the StorPoint HD.

Directory Structure

The StorPoint HD will appear to your system as a file server. Like any other file server it has a directory structure where files are stored. The StorPoint HD directory structure is outlined below:



The purpose of each folder is explained in detail on the following pages.

The Jaz folder

The Jaz folder contains:

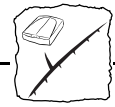
- The folders that hold the files on the inserted Jaz disks.
- The `disktool.txt` file can be used for formatting and changing the protection mode of the inserted Jaz disk. It also allows you to change the volume label. See "*Disk Tools*" on page 33.
- The file `index.htm` used when accessing the StorPoint HD from a Web browser.

When you insert a Jaz disk into a connected drive, a folder for that Jaz drive is created in the Jaz folder. All the files on that Jaz disk are accessed through this folder.

The name of the folders found under the Jaz folder will comply with the following rules:

- If the system administrator has set a Jaz drive alias name this will be used. The drive alias name is also known as the SCSI alias name, or SCSIAlias.
- If the system administrator has set a Jaz disk alias name, but no SCSI alias, this name will be used.
- If no alias names have been set, the volume name held on the Jaz disk will be used.
- If the Jaz disk does not have a volume name, and no alias names have been set, the StorPoint HD will automatically allocate a name of the form nnnnnnnn, where nnnnnnnn is the Jaz disk serial number.

Often the volume name is not a good representation of the Jaz disk contents. An alias name is a convenient way of setting a more significant or recognizable name.



SCSI alias names are useful for the following reasons:

- When you set a SCSI alias any Jaz disk inserted into the drive will be seen as having this name. Thus you could use the same drive for a series of Jaz disks, such as a monthly issue, and you will not have to enter a new name each time you change the disk.
- When you enter a SCSI alias, the volume rights for any disk inserted in the drive will be determined by the drive access rights. This is more convenient because you only have to be set the access rights once. Thus, the Jaz disk in the drive can be replaced without need to specify the access rights each time.

Refer to "*The Access Files*" on page 57 for information about setting the Jaz disk alias name and the SCSI alias name.

Caution If you wish to run an application on the Jaz disk or an application that looks for its associated files on the Jaz disk, you cannot use an alias name because the application will not recognize it.

The Config folder

The Config folder contains these StorPoint HD configuration files:

- The Html folder contains HTML files and images used when accessing the StorPoint HD from Web browsers.
- The `config.ini` file contains the StorPoint HD configuration parameters.
- The `scsi.txt` contains a list of the attached Jaz drives.
- The `stat.txt` file contains StorPoint HD statistics.

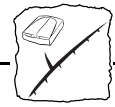
The Volumes folder

The Volumes folder contains all files used for controlling the access of the StorPoint HD, the connected Jaz drives, and the inserted Jaz disks.

The Volumes folder contains these folders:

- The Jazdisk folder contains access rights files to individual Jaz disks.
- The Scsi folder contains access rights files to individual Jaz drives.
- The Server folder contains access rights files to the StorPoint HD system files and default settings.

For more information about controlling access to the StorPoint HD, refer to "Section 6 - *StorPoint HD Security System*".

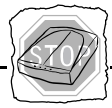


Access Points

The AXIS StorPoint HD is integrated into your network operating system just like any other file server and you use the same commands to access it. To be able to access the Jaz disks from your Windows or DOS applications, you need to make them available to your system, that is to 'mount' the StorPoint HD. On PC systems, this is typically done by mapping the server to a drive letter.

The StorPoint HD offers several possibilities to specify access points:

- **root level access**: The top level of the StorPoint HD directory structure is used as the access point. The user of the StorPoint HD can access all files on the server including the Config and Volumes folders. This is useful for Network Administrators, who must be able to configure and monitor the StorPoint HD.
- **Jaz folder access**: The Jaz folder is used as the access point. The user can access all Jaz disks inserted into the drives connected to the server. On PC systems this makes it possible to use only one drive letter to access all connected drives. This is the recommended access for normal users.
- **Jaz disk access**: A folder for an inserted Jaz disk, or a connected Jaz drive if the SCSI Id has been given a SCSI alias name, is used as the access point. Only the files on that Jaz disk can be accessed. On PC systems, this makes it possible to map a drive letter to a single Jaz disk. This is useful or even necessary with software that expects to find its data at root level.



Section 6 StorPoint HD Security System

This section includes information about security management and access files in the StorPoint HD.

To set up access restrictions for specific network environments, refer to the appropriate section of the manual:

- Section 3 - Web browser (HTTP)
- Section 4 - Microsoft and IBM networks (SMB)

StorPoint HD Access Rights

You can set up the AXIS StorPoint HD to restrict user access to connected Jaz drives and individual Jaz disks, as well as to the StorPoint HD configuration files. It is also possible to limit the number of users simultaneously accessing any Jaz disk in order to comply with licensing agreements.

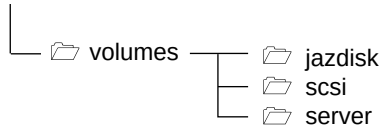
You are recommended to implement at least two access restrictions:

- **Protect the server configuration by restricting access to the root directory.** For SMB, you specify the `SMBPassword` parameter in the `root.txt` file. For HTTP, FTP and SNMP, you specify the `ServerPassword` parameter in the `config.ini` file.
- **Disable all protocols not being used.** If unconfigured protocols are not disabled, any user accessing the server through such a protocol will be given full access rights, even if a tight security scheme has been setup in other protocols.

The Access Files

There are separate access files for each of the Jaz drives, the Jaz disks inserted into the drives, and the StorPoint HD's configuration files. To change the access rights to any of these volumes, you need to change the parameter values in the corresponding access files held in the StorPoint HD.

The access files are stored in the Volumes folder, which contains the three folders shown:



Jazdisk folder The Jazdisk folder contains the access right information for all the inserted Jaz disks. When inserting a new Jaz disk, a text file with the volume name is automatically created. The file will remain in storage even if the Jaz disk is ejected, in order to be immediately available when the disk is re-inserted. When the memory becomes full, the oldest file will be discarded.

Scsi folder The Scsi folder contains the access right information for the Jaz drives. For each SCSI ID, a text file named `id<x>lun<y>.txt`, where `<x>` is the SCSI address and `<y>` the LUN address, is automatically created.

Note:

- If a `DriveAlias` is set for a Jaz drive, the access settings for the drive will override the Jaz disk settings for disks that are inserted in that drive. This can be useful if you have a series of disks, e.g. a monthly issue. If `DriveAlias` is set, the following parameters will override those defined for the inserted volume:
  - `Comment`
  - `UserLimit`
  - `SessionTimeout`
  - `SMBPassword`

  However, if no alias is set, the access settings for the drive will not be used.

Server folder The Server folder contains the access right information for the StorPoint HD file system. The `jaz.txt` and `root.txt` files control the access to the Jaz and Root directory, respectively. The `default.txt` file contains the default settings used whenever a new Jaz disk or Jaz drive is connected.

Access Parameters

The following list describes the parameters held in the access files.

Note:

- Not all of the parameters are used in every access file due to the difference in functionality. Items marked `^` only appear in the drive access rights files, which are named as `id<x>lun<y>`, where `<x>` is the SCSI address and `<y>` the LUN address.

`VolumeLabel` is the volume label, and cannot be changed via the access files. However, you can use the Disk tools to change the volume label. See "*Disk Tools*" on page 33.

`VolumeAlias` is the name representing the volume in the StorPoint HD directory structure. For Jaz disks, it is also used as the SMB share name.

By specifying this parameter, you can select a name that makes sense to the Jaz disk users. The name must be a unique and valid volume name. The default is the volume name truncated to 8 characters.

The SMB share name must not exceed 12 characters - if this is not sufficient to give a meaningful name, use the `Comment` parameter.

For the Server folder files, this setting cannot be changed.

`DriveName^` is the manufacturers name of the drive, and cannot be changed.

`DriveAlias^` is the name displayed in the Jaz folder representing the Jaz drive. By editing this entry, you can select a name that makes sense to the users of the Jaz drive. The name must be a unique and valid volume name.

The SMB share name must not exceed 12 characters - if this is not sufficient to give a meaningful name, use the `Comment` parameter.

`InsertedVolume^` is the name of the Jaz disk currently inserted to the drive. Cannot be changed.

`LockEject^` will lock the eject button if set to `yes`.

`Comment` is text displayed in Windows Explorer and Web browsers to add more information to the users.

UserLimit is the maximum number of simultaneous users of the volume or drive. If set to 0, any number of users may access the resource.

SessionTimeout specifies how many seconds a user is considered to be active after the last access. When the time has expired, another user may access the resource and perhaps lock out the first user, depending on the `UserLimit` setting. If `UserLimit` is set to 0, i.e. any number of users, `SessionTimeout` cannot be set.

SMBPassword is used for restricting access to the volume or drive by prompting the users to enter a password. `SMBPassword = *` means that no password is required to access the volume. Used in SMB and HTTP.

Editing the Access Files

You can use different methods to change the settings in the access files:

- Web browser
- AXIS WinPoint's Windows configuration tool
- Text editor

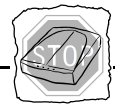
This table describes where you find the access files:

To set access rights to:	Open:
An individual Jaz disk	The Jaz disk name in the Jazdisk folder, e.g. `jazdisk/music_1.txt`
An individual Jaz drive	The drive identity in the Scsi folder, e.g. `scsi/id2lun0.txt`
All of the connected drives and Jaz disks	`server/jaz.txt`
The StorPoint HD configuration and security files in SMB	`server/root.txt`
New drives and Jaz disks that will be connected in the future	`server/default.txt`

Notes:

- If the Jaz disk has no volume label or alias name, the StorPoint HD will allocate a name of the form <nnnnnnnn>, where nnnnnnnn is an unique eight digit number.

Caution When editing the files be sure that the equal sign and the parameter value are separated by a space. Do not remove the `[END]` marker from the files.



Web Browser

From a Web browser, follow these steps:

1. Open the Management - Volume Rights page. These volumes folders are displayed: Jazdisk, Scsi and Server.
2. Select the appropriate folder.
3. Select the name of the volume you want to update.
4. Enter the new settings. Make sure that the equal sign and the parameter value are separated by a space. Do not to remove the `[END]` marker at the end of the file.
5. Click Submit settings to download the changes to the StorPoint HD. The new settings will immediately take effect, and a page will appear to report the successful change in settings.

AXIS WinPoint Configuration Tool

From the AXIS WinPoint configuration tool, follow these steps:

1. Open the Management - Volume Rights page.
2. Select the folder you want to manage. The access parameters are presented to the right.
3. Enter the new settings.
4. Click Submit Settings to save your changes.

Text Editor

From a text editor, follow these steps:

1. From your favourite editor, open the appropriate access file according to the table on page 60.
2. Enter the new settings. Make sure the equal sign and the parameter value are separated by a space. Do not to remove the `[END]` marker at the end of the file.
3. Save the file. Saving the file makes the new settings take effect immediately.

The general format of the access control files is shown below:

```
; Volume Information for Volume 2679354
VolumeLabel       = DOS3          ;Cannot be changed
VolumeAlias       = Accounting 3
Comment           = Accounting information, March
UserLimit         = 0
SessionTimeout    = 0
SMBPassword       = *

[END]
```

The details vary according to which access file you are changing.

Appendix A Troubleshooting

This appendix will help you with:

- Running a diagnostic test
- The front panel indicators
- Errors when accessing the StorPoint HD
- Problems when running Jaz disk software
- Restoring the factory default settings

Running a Diagnostic Test

The diagnostic test will check the StorPoint HD's memory and the performance of the connected drives.

Please read the following notes before using the diagnostic test:

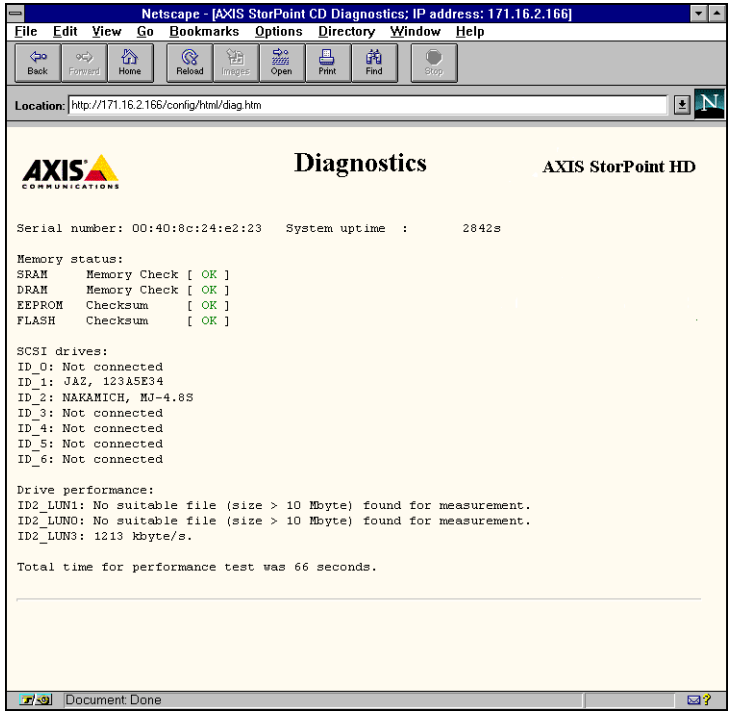
Before you begin

- Users currently accessing the StorPoint HD will be interrupted.
- The diagnostic test is only available for the first hour after switch on or restart. Also, you must restart the StorPoint HD before you can repeat the diagnostic test.

To perform a diagnostic test, follow these steps:

1. Start the Web browser and enter the URL of the server's diagnostic page, i.e.
   `http://<Internet address>/config/html/diag.htm`
2. Make sure that a suitable Jaz disk is inserted into each of the drives whose performance is to be tested.

3. To start the diagnostic test, simply reload the Diagnostics page in the Web browser. The test may take several minutes. When completed, you must once again reload the diagnostic page to see the results.



Example Diagnostic Test Result

Note: ❑ Any further reloading of the diagnostic page will simply show the same test results. You must restart the StorPoint HD before you can repeat the test.

The Front Panel Indicators

The front panel indicators show the status of the StorPoint HD. The indicators have the following functions:

- **Status** – Flashes during startup. When the StorPoint HD is ready for use, this light goes out. The LED remains unlit, unless an error condition occurs.
- **Disk** – Turns on when the first Jaz disk is inserted and remains lit until the last disk is ejected. The LED will be either lit or unlit, unless an error condition occurs.
- **Network** – Flashes randomly to indicate the presence of network traffic.
- **Power** – Indicates that power is present in the unit. The LED remains lit and is only used to indicate power.

Normal Conditions

The Power LED is controlled by hardware and is always lit when power is connected. The Network LED will flash randomly when there is network traffic.

Event	Status LED	Disk LED	Network LED
Initial power to unit	ON	ON	ON
During power-up and self-test. Approx. 30 sec.	Flash	OFF	OFF
After power-up and self-test	OFF	ON	Flash
First disk inserted	OFF	ON	Flash
Last disk removed	OFF	OFF	Flash
Network packet arrived	OFF	ON or OFF	Flash
Flash loading using FTP	OFF	Flash*	Flash
Flash loading using parallel port	Flash**	Flash**	Flash**

* Flash rate: 2 sec ON, 2 sec OFF.
** Flash rate: 0.15 sec ON, 0.15 sec OFF.

Error Conditions

This table shows various error conditions in the StorPoint HD:

Event	Status LED	Disk LED	Network LED
Drive/disk error, e.g. incorrect disk format. Check the `stat.txt` file in the Config folder for more information.	OFF	Flash*	Flash
Problem with the SCSI bus or one of the connected Jaz drives.	ON	ON or OFF	Flash
Problem with the SCSI bus connectors	OFF	OFF	Flash
Faulty network connection	OFF	ON or OFF	OFF
Illegal serial no.	Flash*	Flash*	Flash*
Flash load failed	Flash*	OFF	OFF
Error in EEPROM	Flash*	OFF	OFF
Error in FLASH PROM	Flash*	OFF	Flash*
Error in SRAM	Flash*	Flash*	OFF
Error in DRAM/DIMM	Flash**	OFF	OFF
DRAM/DIMM configuration error.	Flash**	Flash**	OFF
Software/hardware combination error	Flash*	The Disk and Network LEDs flash in counter phase	

* Flash rate: 0.3 sec ON, 0.3 sec OFF
** Flash rate: 0.45 sec ON, 0.15 sec OFF

If you cannot resolve the problem or in case of faulty hardware, please contact your dealer.

Status Indicator On

If the Status indicator remains lit after startup, this may indicate an error. Most likely there is a problem with the SCSI bus or one of the connected Jaz drives. Make sure all connected drives have unique SCSI addresses and that only the last drive in the SCSI chain is terminated.

Disk Indicator Off

If the Disk indicator remains off when inserting a Jaz disk into a connected drive, make sure the SCSI bus connectors are correctly inserted and in good condition.

Errors when Accessing the StorPoint HD

If you get error messages when trying to access the StorPoint HD or any inserted Jaz disk using TCP/IP, please make sure that you have assigned a unique Internet address to the StorPoint HD. See also "*Setup for TCP/IP*" on page 17.

You should also check the SCSI chain and ensure that all external Jaz drives are switched on and that only the last unit is terminated. Make sure the drives are switched on before the AXIS StorPoint HD is powered up. See also "*Connecting Jaz Drives to the StorPoint HD*" on page 14.

Please note that Microsoft Windows Network must be enabled to access the StorPoint HD using SMB.

Consult the error table above to see if the front panel indicators can help you identify the problem.

Problems Running Jaz Disk Software

If you have successfully inserted a Jaz disk, but the software on it refuses to run or produces error messages, the software may expect the Jaz data to be at root level. In the Microsoft and IBM network operating system environments, you will then have to assign a drive letter to that particular disc. See "*Accessing Networked Jaz Drives (SMB)*" on page 39.

It may be necessary to restrict the number of simultaneous users to one if the Jaz disk software is a single user version.

Some applications look for information on the Jaz disk using its default name - if you have set an alias name it may not recognize the disk and fail to run.

Restoring Factory Default Settings

The factory default settings can be restored if required, e.g. if you have disabled all network protocols. Restoring the settings can be done in three ways:

- Using a Web browser on a TCP/IP network.
- Using FTP on a TCP/IP network.
- Using the Push button.

Step by step instructions for each method are given below.

Caution ❑ The node address (`HardwareAddress` parameter) will remain unchanged, but all other parameters are reset.

Using a Web browser

Follow these steps to reset to the defaults settings using a browser:

1. Start the Netscape Navigator and go to the Management page.
2. On the Management page, click Factory default.
3. On the next page, confirm by clicking Set defaults. The factory default setting will now be restored and the StorPoint HD will then automatically restart.

Using FTP

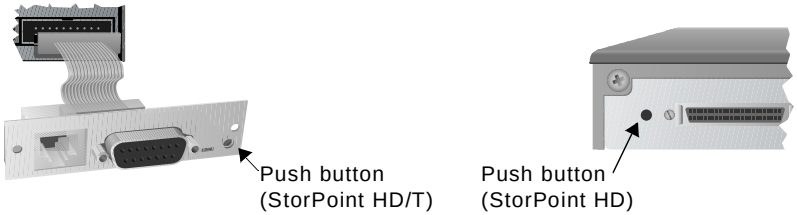
Follow the steps below to restore the default settings using FTP:

1. Log in to the AXIS StorPoint HD with the command `ftp <host name>` where `<host name>` is the name assigned in your system host table.
2. You will be prompted for user id and password, i.e. the `ServerPassword` parameter set in the `config.ini` file. The default password is `pass` (`root` is the user id with the highest priority).
3. Issue the command `get defaults` to restore the default settings. The unit will then automatically restart.
4. Log out using the command `quit`, `bye` or `exit` depending on your FTP version.

Using the Push Button

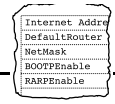
Follow the steps below to restore the default settings:

1. Turn off the StorPoint HD.
2. Press and hold the Push button while you switch on the StorPoint HD. Keep the Push button pressed until the Network indicator flashes at regular two second intervals.



3. Release the Push button and wait at least two seconds (one flash of the Network indicator).
4. Press and hold the Push button for at least five seconds until the Network indicator remains constantly lit.

The StorPoint is now reset to factory default settings and will automatically restart.

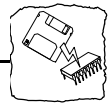


Appendix B The Config File

This section includes the StorPoint HD parameter list stored in the `config.ini` file. The middle column shows the default values, when applicable. The right-hand column gives a brief description of the parameters.

Parameter name	Value	Description
`[Server]`		
`HardwareAddress`	`= 00:40:8c:11:00:86`	The StorPoint HD hardware address. Default setting is the serial number. You can set a Locally Administrated Address. The value shown is an example only.
`Date`	`= 98-03-01`	yy-mm-dd, enter the date followed by ! to set manually
`Time`	`= 12:00:00`	hh:mm:ss, enter the time followed by ! to set manually
`FactoryDefaults`	`= no`	Set to *yes* to restore the factory default settings.
`Restart`	`= no`	Set to *yes* to restart the StorPoint HD.
`ServerPassword`	`= pass`	The Supervisor, Administrator or Root user password used for the HTTP, SNMP and FTP protocols. Once written into the configuration file, the password will not be shown but replaced with *'s, representing each letter of the password.
`[SCSI]`		
`SCSITermination`	`= on`	Internal SCSI termination setting. This is always on, therefore the StorPoint HD must always be located at the end of the SCSI bus.
`[IP]`		
`InternetAddress`	`= 192.36.253.80`	The StorPoint HD Internet address.
`DefaultRouter`	`= 0.0.0.0`	All traffic directed outside the local network (according to the NetMask) is sent to the default router. Any re-routing via other routers is done automatically. The default *0.0.0.0* indicates that no default router is set.
`NetMask`	`= 0.0.0.0`	Used for determining when traffic should be sent via a router. For example, the normal class C mask is 255.255.255.0. The default *0.0.0.0* indicates that automatic router sensing is used.
`BOOTPEnable`	`= yes`	Enables BOOTP IP address setup.
`RARPEnable`	`= yes`	Enables RARP IP address setup.
`DHCPEnable`	`= yes`	Enables DHCP IP address setup.
`[SMB]`		
`EnableNetBEUI`	`= yes`	Enables SMB over NetBIOS/NetBEUI.
`EnableNBT`	`= yes`	Enables SMB over NetBIOS/TCP/IP.
`EnableWINS`	`= yes`	Enables WINS over NetBIOS/TCP/IP.
`PrimaryWINSserver`	`=`	Primary WINS server address.
`SecondaryWINSserver`	`=`	Secondary WINS server address, if required.
`NBTscopeID`	`=`	Always enabled. Default is an empty string.
`Domain/GroupName`	`= WORKGROUP`	The name of the StorPoint HD workgroup.
`ServerName`	`= AXISnnnnnn`	The server name in the Microsoft Network environment, where *nnnnnn* are the last 6 digits of the serial number.

Parameter name	Value	Description
NetBEUIFrameType	= auto	If set to *auto*, 802.2 or dix will automatically be selected by scanning the network. If required, the frame type can be set to either 802_2 or dix.
ShowAllShares	= yes	Allows the user to see the Jaz and Root folders. If set to *no*, only the Jaz disks are visible.
[HTTP/FTP]		
HTTPEnable	= yes	Enables HTTP. Set to *no* to restrict users from accessing the Jaz disks from a Web browser.
BaseURL	= www.axis.com/	Used for external links, e.g. on-line help.
[SNMP]		
GetCommunityName	= public	Specifies the community that has read only access to all supported SNMP objects except writeCommunity, SupervisorPassword and ftpPassword. It corresponds to the readCommunity SNMP object.
TrapDestination	= 0.0.0.0	Specifies the Internet address which SNMP traps are sent to. It corresponds to the trapAddress SNMP object. Default is *0.0.0.0*, i.e. all SNMP traps are disabled.
TrapCommunityName	= public	Specifies the community for all generated SNMP traps. It corresponds to the trapCommunity SNMP object.
SystemContact	=	Optional entry which should be in plain text and may be used to show the name of the system contact person.
SystemName	=	Optional entry which should be in plain text and may be used to show the name of the location of the system.
SystemLocation	=	Optional entry which should be in plain text and may be used to show the name of the location of the system.
AuthenticationTrap	= disabled	Disables the SNMP authentication failure traps. It corresponds to the snmpenableAuthenTraps (MIB-II) SNMP object.
[END]		



Appendix C Updating the Software and Extending the Memory

Software Updates

The StorPoint HD software stored in *Flash Memory* can easily be updated over the network. All software updates are free of charge.

Extending the Memory

You can increase the performance of your StorPoint HD by adding extra memory; the basic 2 Mbytes of RAM can be increased up to 32 Mbytes. The extra cache memory will speed-up data flow rates, especially when several users are accessing the same disk.

For more information see the Technical Support Page for the AXIS StorPoint HD on the Axis Web site.

Checking if a Software Update is available

Contact your dealer to check if there has been any new issues of the software. You should have your present version numbers ready to compare against the latest software issues from Axis.

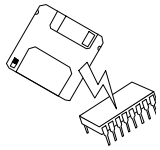
Alternatively go to the Axis Web site at **http://www.axis.com/**, where you can download the latest versions of the software. A link to the Axis Web site is available on the StorPoint HD's Home Page. You can also get files and information through anonymous ftp: log in to **ftp.axis.com** and go to the **/pub/axis** directory.

Flash Memory The software that runs your Axis StorPoint HD is stored in Flash Memory. This is a memory chip that, like ordinary ROM memory, keeps its contents even when the power is turned off. What makes it unique is the possibility to erase its contents and write new data to it. This means that when software updates are available for your StorPoint HD, you can make use of them without having to replace any parts. The new software is simply loaded into the StorPoint HD over the network.

Updating the Axis StorPoint HD Flash Memory

You can carry out an update to your Flash Memory over the network using FTP on a TCP/IP network.

To upgrade over the network you will need the following:



- The file with the new StorPoint HD software. The name of this file is of the form *product.version*, e.g. HDE_100.BIN for the software release 1.00 for the Ethernet version of the AXIS StorPoint HD. Retrieve the updated file from the Axis Web site or your local distributor.
- A computer on the network with TCP/IP and FTP.
- The StorPoint HD must also be installed on the network with TCP/IP as described in"*Setup for TCP/IP*" on page 17.

Follow the steps below to upgrade the StorPoint HD software:

1. Log in to the StorPoint HD with the command `ftp <host name>` where `<host name>` is the name assigned in your system host table.
2. You will be prompted for user id and password. Use the user id `root`, which has the default password `pass` (`root` is the user id with the highest priority).
3. Issue the command `bin` to change to binary transfer mode.
4. Issue the command `put <software name> flash` where `<software name>` is the name of the new StorPoint HD software, e.g. `HDE_100.BIN`.
5. Wait for the Flash load to finish. This normally takes 1 to 4 minutes. The unit will then automatically restart with the new StorPoint HD software.

Caution

- ❑ Be careful not to interrupt the file transfer. If the transfer is interrupted the StorPoint HD may have to be re-initialized by your dealer.

6. Log out using the command `quit`, `bye` or `exit` depending on your FTP version.

Instructions on how to carry out the update are also supplied with the software update.

Appendix D Technical Specifications

Supported Systems	
Microsoft Windows	Windows 95, Windows NT, Windows for Workgroups.
Microsoft LAN Manager	LAN Manager 1.3 and above.
IBM LAN Server	LAN Server 1.3 and above.
WWW	Internet/intranet over HTTP 1.0 and HTML 2.0 compatible Web browsers.
Supported Protocols	
Windows and OS/2	SMB over NetBIOS/NetBEUI, SMB over NetBIOS/TCP/IP.
TCP/IP	UDP, IP, TCP, ARP, RARP, BOOTP, DHCP, WINS/NBNS, SNMP, FTP.
WWW	HTTP over TCP/IP.
Network Management	SNMP MIB-II and private enterprise MIB. Platform independent configuration and management via standard Web browser.
Security	
Microsoft Windows, IBM OS/2	Share level access control.
WWW	Password.
File Systems	16 bit VFAT.
Software Updates	Flash memory allows central and remote updating of the StorPoint HD software over the network using FTP over TCP/IP.
Performance	Data throughput up to 1050 kbytes/s.
Hardware	CPU: 32 bit RISC Controller (ETRAX 4). Flash memory: 2 Mbytes. RAM: 2 Mbytes, expandable up to 32 Mbytes.
Attachments	
AXIS StorPoint HD	10baseT (twisted pair) and 10base2 (thin) for Ethernet version.
AXIS StorPoint HD/T AXIS StorPoint HD/4 AXIS StorPoint HD/8	RJ45 (10baseT) and AUI (10base2, 10base5, fibre via transceiver) for Ethernet version.

Jaz drive connections	Up to 7 SCSI Jaz drives.
AXIS StorPoint HD	SCSI-2, 50 pin female micro-D connector.
AXIS StorPoint HD/T AXIS StorPoint HD/4 AXIS StorPoint HD/8	SCSI-2, 50 pin header.
Compatible Jaz drives	1 Gbyte and 2 Gbyte Iomega Jaz drives.
Power supply	
AXIS StorPoint HD	12V DC ≥13.2 W, via external power unit (PS-C).
AXIS StorPoint HD/T	Via 4 pin power connector: 12V DC (0.5 A - according to ANSI/IEEE 802.3/1993 used for the AUI connector only) and 5V DC (3 A).
Dimensions	Height: 1.7 in (4.3 cm), Width: 5.9 in (14.9 cm), Depth: 8.8 in (22.4 cm).
Weight	1.5 lbs (0.7 kg).
Environmental	Temperature: 40-105°F (5-40°C). Humidity: 20-80% RHG, noncondensing.
Approvals	
EMC	CE: EN 55022/1994, EN50082-1/1992. FCC Subpart B Class A. CE
Safety	EN 60950, UL1950. Approved power supply for all countries.
Warranty	3 years. 5 years if a member of the Axis User Group.

All specifications are subject to change without prior notice.

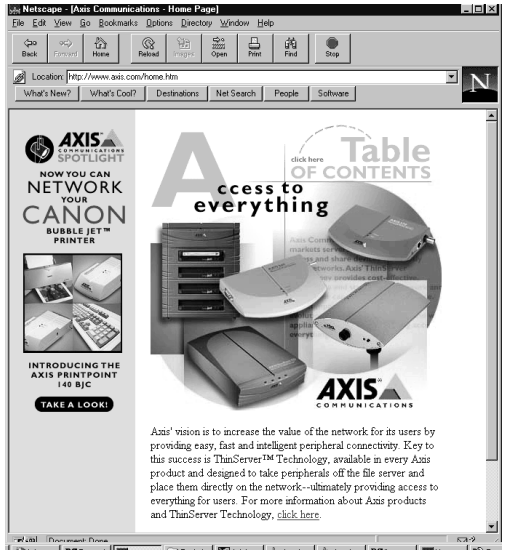
Appendix E How To Contact Axis

Technical Support

If you need technical support, please contact your dealer. If they cannot help, they will forward your request through the appropriate channels.

Internet and World Wide Web

If you are connected to Internet, have a look at the Axis Web site at **http://www.axis.com/**. Here you can find information about the company and our products. You can also download on-line manuals, tools such as the Acrobat Reader for different platforms and the latest versions of the software utilities. You can also get files and information through anonymous ftp: log in to **ftp.axis.com** and go to the **/pub/axis** directory, or enter **ftp://ftp.axis.com/pub/axis** in your Web browser.



The Axis Offices

To contact an Axis office, choose the one nearest to your region:

North America, Latin America

Axis Communications Inc.
4 Constitution Way, Suite G
Woburn, MA 01801-1030, USA
Phone: +1-800-444-AXIS, +1 (781) 938 1188
Fax: +1 (781) 938 6161
Email: info@axisinc.com
URL: http://www.axis.com/

Europe, Middle East, Africa, Australia

Axis Communications AB
Scheelevägen 16
S-223 70 Lund, Sweden
Phone: +46 46 270 18 00
Fax: +46 46 13 61 30
Email: info@axis.com
URL: http://www.axis.com/

France

Axis Communications SA
191 avenue Aristide Briand
94230 Cachan, France
Phone: +33 1 49 69 15 50
Fax: +33 1 49 69 15 59
Email: info@fr.axis.com

United Kingdom

Axis Communications (UK) Ltd
Greenhill House
90-93 Cowcross Street
London, EC1M 6BH
Phone: +44 171 553 92 00
Fax: +44 171 553 92 09
Email: info@uk.axis.com

München **Axis Communications GmbH**
Freischützstr. 77
D-81927 München, Germany
Phone: +49 89 95 93 96 0
Fax: +49 89 95 93 96 69
Email: info@de.axis.com

Japan **Axis Communications K.K.**
Sumitomo-Fudosan Tsukiji Building 1F
7-17-1 Tsukiji, Chuo-ku
Tokyo 104-0045, Japan
Phone: +81 3 3545 8282/8
Fax: +81 3 3545 8280
Email: info@axiscom.co.jp
URL: http://www.axiscom.co.jp

Singapore, Southeast Asia, The Pacific **Axis Communications Pte Ltd.**
51 Thomson Road
187B Goldhill Centre
Singapore 307630
Phone: +65 250 8077
Fax: +65 352 1655
Email: info@axis.com.sg

Hong Kong, Northeast Asia, India **Axis Communications Ltd.**
Room 602, Asian House, 1 Hennessy Road
Wanchai, Hong Kong
Phone: +852 2836 0813
Fax: +852 2573 5935
Email: info@axis.com.hk

China **Axis Communications Ltd. Beijing Office**
Room 1719, 17/F, Tower 2
Bright China Chang An Building
7 Jian Guo Men Nei Street
Beijing 100005, China
Phone: +86 10 6510 2705
Fax: +86 10 6510 2703
Email: axisbj@public3.bta.net.cn

Axis Communications Ltd. Shanghai Office
Room A, 19/F, New Hua Lian Mansion
755 Huai Hai Zhong Road
Shanghai 200020, China
Phone: +86 21 6445 4522
Fax: +86 21 6445 4757
Email: axissh@npc.haplink.com.cn

Taiwan **Axis Communications Ltd.**
Floor 8-7, No. 495 Kuang Fu South Road
Taipei, Taiwan
Phone: +886 2 8780 5972
Fax: +886 2 8780 5975

Korea **Axis Communications Ltd.**
42F, KLI 63 Bldg. 60, Yoido-dong
Yeongdeungpo-Ku
Seoul, Korea
Phone: +822 780 9636
Fax: +822 780 5802

Appendix F Glossary

AIX Advanced Interactive eXecutive. A version of the UNIX operating system from IBM that runs on various IBM computers including Mainframe systems.

ARP Address Resolution Protocol. A protocol within TCP/IP networks that allows a host to find the physical address of a node on the same network.

BOOTP Boot Protocol. A TCP/IP protocol, which allows an Internet node to discover certain startup information such as its Internet address.

BSD Berkeley Software Distribution. The University of California, Berkeley additions to the UNIX operating system.

DHCP Dynamic Host Configuration Protocol. A system based on network interface card addresses for allocating Internet addresses and other configuration information for networked systems.

FTP File Transfer Protocol. The TCP/IP protocol used for logging into a network and transferring files.

HTML Hypertext Markup Language. A standard hypertext language used for creating World Wide Web pages and other hypertext documents.

HTTP Hypertext Transfer Protocol. The TCP/IP protocol for Web based communication.

IP Internet Protocol. The TCP/IP session-layer protocol that regulates packet forwarding by tracking Internet addresses, routing outgoing messages and recognizing incoming messages.

LED Light Emitting Diode.

MIB Management Information Base. A database of network configuration information used by SNMP and CMIP to monitor or change network settings.

NIS Network Information Services. The security and file-access databases on UNIX systems, previously known as Yellow Pages.

RARP Reverse Address Resolution Protocol. A TCP/IP protocol governing the translation of a Data-Link Control (DLC) address to an Internet address.

RISC Reduced Instruction Set Computing. A processor that recognizes only a limited number of assembly-language instructions.

SCSI Small Computer System Interface. A high-speed parallel interface, used to connect a computer to peripheral devices using just one port.

SMB Server Message Blocks. A protocol that makes use of NetBIOS.

SNMP Simple Network Management Protocol. A TCP/IP protocol for managing and monitoring nodes on a network.

TCP Transmission Control Protocol. The connection-oriented, transport-level protocol used in the TCP/IP suite of protocols.

UNIX A 32-bit multitasking, multiuser operating system originally developed by AT&T. UNIX is now owned by Novell.

URL Uniform Resource Locator. A way of specifying the location of publicly available information on the Internet.

YP Yellow Pages. The security and file-access databases on UNIX systems. These databases are now known as Network Information Services.

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